in the Ministry of Small Scale Industries, Agro and Rural Industries in Association with Department of Biotechnology. A sensitization programme in the form of workshops has jointly been initiated for awareness building in SSI entrepreneurs.

Conference on Monsoon failure

3260. SHRI K. KALAVENKA A RAO: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the Meteorological Department of India held a conference of weather experts in November, 2002, to study the causes for failure of this year's Monsoon in the country;

(b) if so, what are the details in this regard; and

(c) whether experts from foreign countries also participated in this conference?

THE MINISTER OF STATE IN THE DEPARTMENT OF SCIENCE AND TECHNOLOGY IN THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI BACHI SINGH RAWAT): (a) to (c) The Department of Science and Technology (DST) organised a Brainstorming session on Monsoon 2002 in Bangalore on 28-29 November, 2002 to discuss the causes of failure of this year's summer monsoon in the country. In this session, several Scientists from India Meteorological Department, Indian Institute of Tropical Meteorology, Pune, National Centre for Medium Range Weather Forecasting, New Delhi, Space Applications Centre, Ahmedabad, Indian Institute of Technology (NT) New Delhi, Centre for Mathematical Modelling and Computer Simulation (CMMACS), Cochin University, Andhra University and the Indian Institute of Science, Bangalore, participated.

The monsoon season of 2002 in which the all-India monsoon rainfall was in deficit by 19% has turned out to be an intriguing season. None of the methods developed for empirical prediction, which have been reasonably successful for over a decade could predict this drought. The predictions given in May 2002, on the basis of complex atmospheric/climate models by the leading global centres, also did not suggest a drought over India. The focus of the meeting was on this monsoon season of 2002 with a particular emphasis on July 2002 in which an unprecedented deficit of 49% was observed. Observations from India and global data were discussed in detail. Empirical predictions for the season as well as July were discussed and possible modifications of the models, for better predictions of the season and July 2002 were also discussed.

The Scientists concluded that predicting extremes such as the severe drought remains an extremely challenging problem. However, with further efforts in development of empirical methods and more investigations with general circulation models, the scientists expect improvement in the skill of prediction of rainfall of the season and for the monsoon month of July.To achieve this, a multi pronged approach was recommended. More observations over the ocean with ships, buoys, floats, etc. are required. Special observational experiments such as BOBMEX conducted over the Bay of Bengal in 1999 and ARMEX over the Arabian Sea in 2002 are needed on a regular basis. Further research in atmospheric models aimed towards developing a unified model which can generate robust simulations of the monsoon and its variability is essential. More work on ocean models for simulating the conditions over the Indian Ocean from the enhanced observational network is necessary.

Experts from foreign countries did not participate in this meeting.

Indo-Russia venture for transfer of Technologies

3261. SHRI VIJAY J. DARDA: Will the Minister of SCIENCE AND TECHNOLOGY be pleased to state:

(a) whether the India-Russia Joint Centre, being set-up for transfer of technologies evolved through collaborative efforts, would be concentrating only on new and innovative technologies or it would also upgrade the already transferred technologies in fields like Defence Aircrafts, etc., with a view to minimizing accident rate; and

(b) if so, what sensitive projects in other fields are contemplated, where gestation period is low and quick results are achieved?

THE MINISTER OF STATE IN THE DEPARTMENT OF SCIENCE AND TECHNOLOGY IN THE MINISTRY OF SCIENCE AND TECHNOLOGY (SHRI BACHI SINGH RAWAT): (a) and (b)The proposed Centre aims to catalyse industrial realization of results of joint projects implemented/being implemented under ILTP (Integrated Long Term Programme of Cooperation in Science and Technology) as well as other high-tech accomplishments available on either side. The proposed Centre will help industry in updating technologies and also encourage creation of joint ventures around advanced technologies in both countries with focus on technologies capable of industrial and commercial application in civil sector.